CHANGES TO THE SPECIFICATION

Amend paragraph **[0012]** as follows.

--**[0012]** **FIGURE 1** is a side view of a wheel loader in accordance with the present invention;

FIGURE 2 is a perspective view of the articulation joint that pivotally couples the front frame to the rear frame;

FIGURES 3A-3C are cross-sectional views of a steering cylinder according to the present invention for the wheel loader of FIGURES 1 and 2 showing the cylinder in three different configurations; **FIGURE 3A** shows a free flow position; **FIGURE 3B** shows a middle position with flow partially reduced; and **FIGURE 3C** shows a third position in which substantially all fluid flow is through a bypass orifice;

FIGURE 4 is an overall view of the hydraulic steering control circuitry of the vehicle showing a hydraulic fluid source, a priority circuit, an ~~Orbitrol~~ORBITROL circuit that meters hydraulic fluid flow to the steering cylinders; and the steering cylinders themselves;

FIGURE 5 is a detailed hydraulic circuit schematic of the ~~Orbitrol~~ORBITROL circuit and cylinders of FIGURE 4;

FIGURE 6 is a detailed hydraulic circuit schematic of the hydraulic fluid source of FIGURE 4;

FIGURE 7 is a detailed hydraulic circuit schematic of the priority circuit of FIGURE 4; and

FIGURE 8 is a graph of a prior art wheel loader's steering speed versus pivot position and a graph of a steering speed versus pivot position that is provided by the wheel loader using the steering cylinder described herein.--

Amend paragraphs **[0043]** through **[0054]**as follows.

[0043] FIGURE 4 illustrates the hydraulic circuit including the two steering cylinders 34 and 36. There are four main components of the steering system. First, the system includes a hydraulic fluid source 132 (also FIGURE 6) that provides hydraulic fluid to the two cylinders. The second component is the priority circuit 134 (also FIGURE 7) which regulates flow between the steering cylinders and the other hydraulic components of the vehicle. The third portion of the system is the ~~Orbitrol~~ORBITROL circuit 136 (also FIGURE 5) which meters a predetermined volume of fluid into the steering cylinders based upon the motion of the wheel loader's steering wheel 150. The fourth component is the steering cylinders 34, 36 themselves, which receive fluid from the ~~Orbitrol~~ORBITROL circuit and, in response, turns the frames with respect to each other.

[0044] The hydraulic fluid source 132 is typically driven by rotating shaft 140 which is driven by the engine 16 of the vehicle. The source 132 includes a variable displacement pump 142 (see also FIGURE 6). The pump provides hydraulic fluid under pressure to conduit 144. Pressurized hydraulic fluid in conduit 144 is directed by the conduit from source 132 to priority circuit 134. Priority circuit 134 determines how much hydraulic fluid the ~~Orbitrol~~ORBITROL circuit 136 needs and distributes fluid to the steering circuit in preference to all other hydraulic fluid needs.

[0045] Typically, when the operator is not steering the vehicle, very little fluid is required for the ~~Orbitrol~~ORBITROL circuit or steering cylinders 34 and 36. The cylinders are relatively stationary as the vehicle travels down the field, and little or no fluid is used. When the vehicle is not turned by the operator, no fluid is needed.

[0046] Priority circuit 134 is responsive to the fluctuating demand and selectively directs hydraulic fluid to conduit 146 when the steering demand is low. Conduit 146 supplies fluid to other complements of the system such as the implements. If the steering circuit needs fluid, the priority circuit reduces the amount of fluid going to conduit 146 and increases the fluid to conduit 148 which supplies hydraulic fluid under pressure to the ~~Orbitrol~~ORBITROL circuit.

[0047] The priority circuit is configured such that whenever the ~~Orbitrol~~ORBITROL circuit 136 needs hydraulic fluid flow, the ~~Orbitrol~~ORBITROL circuit gets that flow even at the expense of other components in the hydraulic system.

[0048] Hydraulic fluid under pressure is conducted through conduit 148 to ~~Orbitrol~~ORBITROL circuit 136. ~~Orbitrol~~ORBITROL circuit 136 is also coupled to steering wheel 150. This wheel is the wheel in the operator's compartment that the operator turns to steer the vehicle to the left or right.

[0049] Depending upon the direction and degree of turning, ~~Orbitrol~~ORBITROL circuit 136 is configured to conduct hydraulic fluid under pressure to either the extend port of the left hand cylinder 34 and the retract port of right hand cylinder 36 through conduit 152 or to direct hydraulic fluid under pressure to the retract port of cylinder 34 and the extend port of cylinder 36 through conduit 154.

[0050] If one conduit 152, 154 receives hydraulic fluid under pressure from the ~~Orbitrol~~ORBITROL circuit, the ~~Orbitrol~~ORBITROL circuit connects the other conduit 154, 152 through conduit 156 and back to hydraulic fluid tank 158. Hydraulic fluid tank 158 serves as the source of low pressure hydraulic fluid for hydraulic fluid source 132. Source 132 draws fluid from tank 158 through conduit 160, pressurizes it and inserts it back into the circuit.

[0051] A signal line 162 is coupled to and between ~~Orbitrol~~ORBITROL circuit 136, priority circuit 134, and hydraulic fluid source 132. This signal line transmits a hydraulic fluid pressure signal from ~~Orbitrol~~ORBITROL circuit 136 back to priority circuit 134 and to source 132. This pressure signal signals priority circuit 134 to change the way it allocates hydraulic fluid flow between the steering cylinders and the other hydraulic components of the system.

[0052] When fluid pressure drops on hydraulic signal line 162 it indicates to the priority circuit 134 that the ~~Orbitrol~~ORBITROL circuit 136 may have difficulty moving the steering cylinders 34 and 36. It thereby provides additional hydraulic fluid under pressure to the ~~Orbitrol~~ORBITROL circuit 136 in an attempt to insure the vehicle can be steered.

[0053] FIGURE 5 shows ~~Orbitrol~~ORBITROL circuit 136 in greater detail. Fluid source 132 provides pressurized hydraulic fluid through conduit 148 to ~~Orbitrol~~ORBITROL circuit 136. This fluid passes through valve 163. Valve 163 directs the fluid into either conduit 152 or conduit 154.

[0054] Valve 163 is actuated by steering wheel 150. When the operator turns the steering wheel to the left, it causes the spool 164 of valve 163 to move downward in

FIGURE 5 ("Up", and "down" refer only to FIGURE 5 and are used for convenience). When the spool moves, it sends fluid to motor 166 through a supply/return conduit 167 in a first flow direction and to the hydraulic cylinders 34, 36 to steer the vehicle in leftward steering direction by conducting pressurized fluid into conduit 154 and fluid in conduit 152 back to tank 158. The ~~Orbitrol~~ORBITROL circuit also returns fluid from the other supply/return conduit 167 to tank 158 through line 156.

Amend paragraph **[0059]** as follows.

[0059] We described the normal operation of ~~Orbitrol~~ORBITROL circuit 136 above – the most common mode of operation when the cylinders are in their normal operating range. When the cylinders approach the limits of their range, however, (when flow is restricted in the cylinders by the piston of FIGURES 3A-3C), the steering system functions differently.

Amend paragraph **[0065]** as follows.

[0065] When the vehicle is just starting or for any other reason the pressure is low or nonexistent in signal line 162, the valve 186 is in the position shown in FIGURE 7. In this position it is biased to the right by spring 188, and all flow is directed through the valve spool 190, into hydraulic conduit 148, and to ~~Orbitrol~~ORBITROL circuit 136. If the pressure is reasonably high, and the steering circuit is not making a demand on the system, valve 186 shifts to the left, conducting more fluid to the implements connected to conduit 146.